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10/816,890	04/05/2004	Kenichi Katsumata	Q80886	4026
65565	7590	10/02/2007		
SUGHRUE-265550			EXAMINER	
2100 PENNSYLVANIA AVE. NW			GLASS, ERICK DAVID	
WASHINGTON, DC 20037-3213				
			ART UNIT	PAPER NUMBER
			2837	
			MAIL DATE	DELIVERY MODE
			10/02/2007	PAPER

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**MAILED**  
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**GROUP 2800**

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/816,890  
Filing Date: April 05, 2004  
Appellant(s): KATSUMATA ET AL.

\_\_\_\_\_  
Chid Iyer  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 5/22/2007 appealing from the Office action mailed 1/30/2007.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

3,581,174

Hammer

5-1971

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 102***

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, as best understood by the examiner, are rejected under 35 U.S.C. 102(b) as being anticipated by Hammer (3,581,174).

With respect to claims 1 and 3, Hammer discloses a motor drive apparatus and method for controlling said apparatus comprising a motor current detecting a motor drive apparatus comprising: a motor current detecting section operable to detect a motor current when a movable member driven by a motor is moved in a first direction (Fig. 2, #58 detects overcurrent); lock current judging section operable to monitor the motor current detected by the motor current detecting section to make a judgment on a lock current that flows when motion of the moveable member is set to a locked state (Fig. 2, reversing section #52 determines a lock condition based on the current received from #58; note that this determination is also made using the time delay circuit); and a switch invalidation setting section operable to invalidate a switch operation when the motor current is the lock current, the switch operation corresponding to moving the movable member in the first direction (col. 3, lines 16-21 and col. 3, lines 30-47; col. 4, lines 33-75; when in automatic reverse mode, the switch 22 is bypassed via #76 and 94 to reverse the motor); and a switch operation invalidation setting canceling section operable to cancel the invalidation by the switch operation invalidation setting section, said canceling being done when a second switch operation of moving the movable member in an second direction is conducted under a state where said invalidation is done. Hammer also discloses stopping the motor and reversing its direction when a stall or lock condition exists (col. 1, lines 21-45). Finally, Hammer discloses the limit switch "reactivates" or cancels the invalidation of the manual switch (col. 5, lines 1-29).

See the above rejection for claim 2, and the following further disclosure by Hammer. Hammer also discloses invalidating the switch operation only for a predetermined period (col. 5, lines 1-15; time period to lower the window so that the nonconductive portion 112 engages the fixed contact 108).

See the above rejection for claim 4, and the following further interpretation of Hammer. Hammer discloses the system essentially "resetting" once the limit switch has been reached (col. 5, lines 1-29). Thus, once the time period for reaching the limit switch has elapsed, if another obstruction, which causes the motor current to exceed the over current relay's threshold, the system again invalidates any manual switch operation.

#### **(10) Response to Argument**

##### **With respect to claim 1:**

Appellant's first argument is that Hammer does not disclose anything more than the technology described in the prior art. The appellant further argues that the instant specification states a problem still exist over the prior art, when the motor is reversed after an obstruction detection, a lock current still flows and the semiconductor device generates heat. However there is no claim limitations prohibiting the generation of heat. Also the prior art of Hammer does not allow a "lock current" to flow after an obstruction has been detected, thus current would not continue to flow.

The appellant's second argument is that Hammer does not discloses an invalidation canceling section. The examiner respectfully disagrees, the prior art of Hammer covers the claimed language in claim 1. Once the automatic reversing circuit

Art Unit: 2837

of Hammer is activated it overrides the manual operation switch of the user (switch operation invalidation), then engages contacts, reverses the motor, opens the window and disconnects the automatic reversing circuit (canceling of invalidation), then the system is open for use or reactivates the system for use by the user again (column 5, lines 1-29). It is stated that the appellant feels the examiner appears to be reading the claims over broad. The examiner respectfully disagrees, and feels the appellant is reading more detail into the claim language than what is present.

**With respect to claims 2-4:**

The appellant's third argument is the limitations analogous to claim 1 described above all are also present in claims 2-4. The appellant does not give any details to this additional arguments, regarding claims 2-4. Similarly to claim 1, claims 2-4 are not in condition for allowance.

**(11) Related Proceeding(s) Appendix**

Art Unit: 2837

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

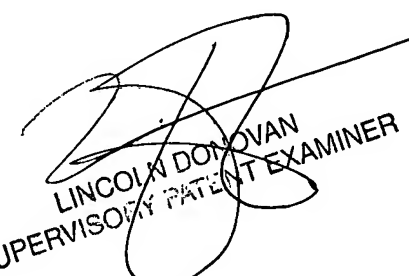
Erick Glass



Conferees:

Lincoln Donovan 

David Blum



LINCOLN DONOVAN  
SUPERVISORY PATENT EXAMINER

**PATENT APPLICATION**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re application of

Docket No: Q80886

Kenichi KATSUMATA, et al.

Appln. No.: 10/816,890

Group Art Unit: 2837

Confirmation No.: 4026

Examiner: Patrick L. Miller

Filed: April 5, 2004

For: MOTOR DRIVE APPARATUS AND METHOD OF CONTROLLING AN OPERATION  
ON THE SAME

**SUBMISSION OF APPEAL BRIEF**

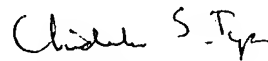
**MAIL STOP APPEAL BRIEF - PATENTS**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

The statutory fee of \$500 is being charged to Deposit Account No. 19-4880 via EFS Payment Screen. The USPTO is also directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



Chid S. Iyer  
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WASHINGTON OFFICE

**23373**

CUSTOMER NUMBER

Date: May 22, 2007



**PATENT APPLICATION**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re application of

Docket No: Q80886

Kenichi KATSUMATA, et al.

Appln. No.: 10/816,890

Group Art Unit: 2837

Confirmation No.: 4026

Examiner: Patrick L. Miller

Filed: April 5, 2004

For: MOTOR DRIVE APPARATUS AND METHOD OF CONTROLLING AN OPERATION  
ON THE SAME

**APPEAL BRIEF UNDER 37 C.F.R. § 41.37**

**MAIL STOP APPEAL BRIEF - PATENTS**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In accordance with the provisions of 37 C.F.R. § 41.37, Appellant submits the following:

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**I. REAL PARTY IN INTEREST**

The real party in interest is YAZAKI CORPORATION (Assignee) by virtue of an assignment executed by the inventors Kenichi KATSUMATA, Yasuyuki MOCHIZUKI, Yuichi NAKAZAWA and Susumu YAMAMOTO on March 29, 2004 and filed on April 5, 2004 along with form PTO-1595.

## **II. RELATED APPEALS AND INTERFERENCES**

Upon information and belief, there are no other prior or pending appeals, interferences, or judicial proceedings known to Appellants, Appellants' representatives or the Assignee that may be related to, be directly affected by, or have a bearing on the Board's decision in this appeal.

**III. STATUS OF CLAIMS**

Each of the pending claims 1-4 are rejected (see Final Office Action dated August 22, 2006).

**IV. STATUS OF AMENDMENTS**

There are no pending unentered amendments.

**V. SUMMARY OF THE CLAIMED SUBJECT MATTER**

The Appellants invention relates to a motor drive apparatus, an example of which is a power window. A power window apparatus opens and closes the window glass using an electric motor. Such power window apparatus is often provided with a jamming prevention mechanism. When such power windows are jammed by a foreign object, the current through the apparatus increases tremendously.

The Specification describes a conventional power window apparatus where a current flowing to a power window motor is detected through a shunt resistor connected in series to the power window motor. The level of the detected current is compared with a predetermined reference value, and, if the current level exceeds the reference value for a predetermined period, the power is stopped. When a lock current flows during a process of raising the window glass and it is judged that a foreign object is caught the direction of rotation of the motor is reversed.

However, in a conventional power window apparatus, when a foreign object is caught during a process of raising window glass where window glass is fully opened, a large current or a lock current flows to a semiconductor device which drives a window motor, and the semiconductor device generates heat. The same problem arises when the window glass is fully closed.

To overcome this problem, the present invention (as recited in claim 1) provides a motor drive apparatus comprising a motor current detecting section operable to detect a motor current when a movable member driven by a motor is moved in a first direction (Specification [0051] and [0052]). A lock current judging section monitors the motor current detected by the motor current detecting section (Specification [0051]). The lock current judgment sections makes a

judgment on a lock current that flows when motion of the movable member is set to a locked state (Specification [0051]). A switch operation invalidation setting section invalidates a switch operation when the motor current is the lock current (Specification [0052]). The switch operation corresponds to moving the movable member in the first direction. A switch operation invalidation setting canceling section cancels the invalidation by the switch operation invalidation setting section (Specification [0052] ll. 10-14). The canceling is done when a second switch operation of moving the movable member in a second direction is conducted under a state where the invalidation is done (Specification [0052] ll. 10-14).

The present invention as recited in claim 2 is analogous to claim 1 except in the sense that the switch operation invalidation setting section invalidates a switch operation for a predetermined period when the motor current is in the lock current (Specification [0021])

The present invention as recited in claim 3 is a method of controlling an operation on a movable member driven by a motor. The method comprised invalidating a switch operation of moving the movable member in a first direction (Specification [0068]). The invalidation is done when a motor current reaches a lock current corresponding a locked state (Specification [0068]). The switch operation invalidation setting state is canceled conducting a second switch operation of moving the movable member in a second direction during said invalidation (Specification [0069]).

The present invention as recited in claim 4 is a method of controlling an operation on a movable member driven by a motor. A switch operation in a first direction of moving the movable member is invalidated for a predetermined period (Specification[0030]). The switch operation invalidation setting state is cancelled by conducting a second switch operation of

moving the movable member in a second direction during the predetermined period  
(Specification [0031]). When the motor current corresponds to the lock current even at a timing  
when the predetermined period elapses, a second switch operation in the second direction is  
invalidated again only for the predetermined period (Specification [0032]).



**VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Hammer (U.S. Patent No. 3,581,174) and are presently under appeal.

## **VII. ARGUMENT**

### **1. Technology disclosed by Hammer**

Hammer discloses a remotely controlled window that can be automatically retracted in response to an obstruction impeding closure of the window. Referring to FIG. 1 of Hammer, an automotive vehicle body 8 is provided with movable window 12 which is retractable into a hollow body section 14. A window regulator 16 moves the window 12 between the closed and open positions. An electric drive motor 18 powers the window regulator 16 based on motor control system 20. The window is remotely controlled by a switch 22. The motor control system 20 includes a motor power circuit 50 and an automatic reversing circuit 52. The manually operated switch 22 applies battery voltage across the field windings 40 or 42 and the armature 54 when the switch lever 82 is placed in the "Close" or "Open" positions, respectively.

During normal operation of the window actuator 16, the switch lever 82 is moved to the "Close" position to energize the field winding 40 from the series circuit including the battery 54, the ignition switch 66, the normally closed contact 74, the contact 84 and the relay winding 62. The motor shaft 46 is rotated clockwise to drive the window regulator 16 to a window raised or closed position. To lower the window 12, the switch lever 82 is placed in the "Open" position to engage the contact 86 and energize the field winding 42 as described for the field winding 40.

During the window raising mode of operation if an object in the window opening 10 blocks further closing of the window 12, the current supplied to the field winding 40 increases and possibly reaches the overload or stalled condition causing a magnetic field that is sufficient to close the contacts 90 and 92. This leads to the reversing relay winding 78 to be connected across the battery 54 eventually causing the overload current condition in the motor 18 is

removed. Regardless of the position of the switch lever 82, the field winding 42 continues to be energized causing the armature 44 to be rotated counterclockwise driving the window regulator 16 to lower the window 12 toward its opened position. The automatic reversing circuit 52 is disconnected and inoperative when the window 12 is in either the opened or closed position. The automatic reversal of the motor 18 prevents motor current from reaching an overload level for an extended time after the motor is stopped by an obstruction.

2. The present invention is not anticipated by Hammer

As described above, Hammer merely discloses a relay circuit that reverses the direction of the motor when the motor is in an overload condition. The Appellants respectfully submit that Hammer discloses nothing more than the technology described in the Background section of the present Specification relating to conventional technology. In fact, the problems identified in the present Application is neither identified nor solved in Hammer.

Importantly, Hammer does not disclose (or suggest) the canceling of the invalidation as in the present invention. The present invention requires a motor current detecting section, a lock current judging section, a switch operation invalidating setting section and a switch operation invalidation setting canceling section. The switch operation invalidation setting canceling section is required to cancel the invalidation by the switch operation invalidation setting section when a switch operation of moving the movable member in a second direction is conducted after the invalidation. In other words, when the window is reversed, the invalidation is required to be canceled. This prevents the problems that are identified in the present Specification.

The Examiner refers to 5:1-29 of Hammer in alleged support for this teaching. However, in this section Hammer merely discloses that the automatic reversing circuit 52 is disconnected and inoperative **when the window is either in the open or closed position**. In other words, this section referred to by the Examiner merely discloses that when the window is completely closed or open, the reversing section is inoperable. This is not believed to be equivalent to the operation of the invalidation canceling section as in the present invention. The invalidation canceling section cancels the invalidation when the window moves in the opposite direction, thereby preventing the problems that are mentioned in the present Specification. In fact, Hammer merely teaches reversing the direction of motion and not the subsequent cancellation of the reversing, as in the present invention. }

In the final Office Action dated August 23, 2006, the Examiner contends that the limit switch of Hammer "reactivates" the manual switch referring to the same section and considers this to be equivalent to canceling of invalidation. However, the Examiner appears to be reading the teaching of Hammer over broad. There is no disclosure or suggestion in Hammer relating to such a reactivation. As noted above, Hammer merely discloses that the automatic reversing circuit 52 is disconnected and inoperative when the window is either in the open or closed position. There is no reactivation as construed by the Examiner.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." MPEP 2131 *citing Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The Examiner has not established anticipation of the present invention by Hammer at least because of the above noted differences.

Therefore, the rejection of claim 1 based on Hammer must be reversed.

Claims 2-4 include limitations analogous to the ones described above in relation to claim

1. Therefore, the finding of anticipation of these claims must also be reversed.

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overpayments to said Deposit Account.

Respectfully submitted,



---

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WASHINGTON OFFICE

**23373**

CUSTOMER NUMBER

Date: May 22, 2007

**CLAIMS APPENDIX**

**CLAIMS 1-4 ON APPEAL:**

1. (previously presented): A motor drive apparatus comprising:

a motor current detecting section operable to detect a motor current when a movable member driven by a motor is moved in a first direction;

a lock current judging section operable to monitor the motor current detected by the motor current detecting section to make a judgment on a lock current that flows when motion of the movable member is set to a locked state;

a switch operation invalidation setting section operable to invalidate a switch operation when the motor current is the lock current, the switch operation corresponding to moving the movable member in the first direction; and

a switch operation invalidation setting canceling section operable to cancel the invalidation by the switch operation invalidation setting section, said canceling being done when a second switch operation of moving the movable member in a second direction is conducted under a state where said invalidation is done. ||

2. (previously presented): A motor drive apparatus comprising:

a motor current detecting section operable to detect a motor current when a movable member driven by a motor is moved in a first direction;

a lock current judging section operable to monitor the motor current detected by the motor current detecting section to make a judgment on a lock current that flows when motion of the movable member is set to a locked state;

a switch operation invalidation setting section operable to invalidate a switch operation for a predetermined period when the motor current is the lock current, the switch operation corresponding to moving the movable member in the first direction; and

a switch operation invalidation setting canceling section operable to cancel the invalidation by the switch operation invalidation setting section, said canceling being done when a switch operation of moving the movable member in a second direction is conducted under a state where said invalidation is done .

3. (previously presented): A method of controlling an operation on a movable member driven by a motor, the method comprising :

invalidating a switch operation of moving the movable member in a first direction , said invalidation being done when a motor current reaches a lock current corresponding a locked state; and

canceling the switch operation invalidation setting state by conducting a second switch operation of moving the movable member in a second direction during said invalidation.

4. (previously presented): A method of controlling an operation on a movable member driven by a motor, the method :

invalidating a switch operation in a first direction of moving the movable member for a predetermined period;

canceling the switch operation invalidation setting state by conducting a second switch operation of moving the movable member in a second direction during the predetermined period; and

invalidating again, when the motor current corresponds to the lock current even at a timing when the predetermined period elapses, a second switch operation in the second direction only for the predetermined period.



APPEAL BRIEF UNDER 37 C.F.R. § 41.37  
U.S. Patent Application No.: 10/816,890

Attorney Docket No.: Q80886

**EVIDENCE APPENDIX**

None.

APPEAL BRIEF UNDER 37 C.F.R. § 41.37  
U.S. Patent Application No.: 10/816,890

Attorney Docket No.: Q80886

**RELATED PROCEEDINGS APPENDIX**

None.

clms 1-4  
Incl. 1, 7, 3, 4

**CLAIMS APPENDIX**

**CLAIMS 1-4 ON APPEAL:**

① (previously presented): A motor drive apparatus comprising:

a motor current detecting section operable to detect a motor current when a movable member driven by a motor is moved in a first direction; *Fig. 58 detect current*

a lock current judging section operable to monitor the motor current detected by the motor current detecting section to make a judgment on a lock current that flows when motion of the movable member is set to a locked state; *Fig. 59 and the delay circuit Col. 16-17 and 30-47*

a switch operation invalidation setting section operable to invalidate a switch operation when the motor current is the lock current, the switch operation corresponding to moving the movable member in the first direction; and

a switch operation invalidation setting canceling section operable to cancel the invalidation by the switch operation invalidation setting section, said canceling being done when a second switch operation of moving the movable member in a second direction is conducted under a state where said invalidation is done.

② (previously presented): A motor drive apparatus comprising:

a motor current detecting section operable to detect a motor current when a movable member driven by a motor is moved in a first direction;

a lock current judging section operable to monitor the motor current detected by the motor current detecting section to make a judgment on a lock current that flows when motion of the movable member is set to a locked state;

a switch operation invalidation setting section operable to invalidate a switch operation for a predetermined period when the motor current is the lock current, the switch operation corresponding to moving the movable member in the first direction; and

a switch operation invalidation setting canceling section operable to cancel the invalidation by the switch operation invalidation setting section, said canceling being done when a switch operation of moving the movable member in a second direction is conducted under a state where said invalidation is done .

③ (previously presented): A method of controlling an operation on a movable member driven by a motor, the method comprising :

invalidating a switch operation of moving the movable member in a first direction , said invalidation being done when a motor current reaches a lock current corresponding a locked state; and

canceling the switch operation invalidation setting state by conducting a second switch operation of moving the movable member in a second direction during said invalidation.

④ (previously presented): A method of controlling an operation on a movable member driven by a motor, the method :

invalidating a switch operation in a first direction of moving the movable member for a predetermined period;

canceling the switch operation invalidation setting state by conducting a second switch operation of moving the movable member in a second direction during the predetermined period; and

invalidating again, when the motor current corresponds to the lock current even at a timing when the predetermined period elapses, a second switch operation in the second direction only for the predetermined period.



FIG. 1

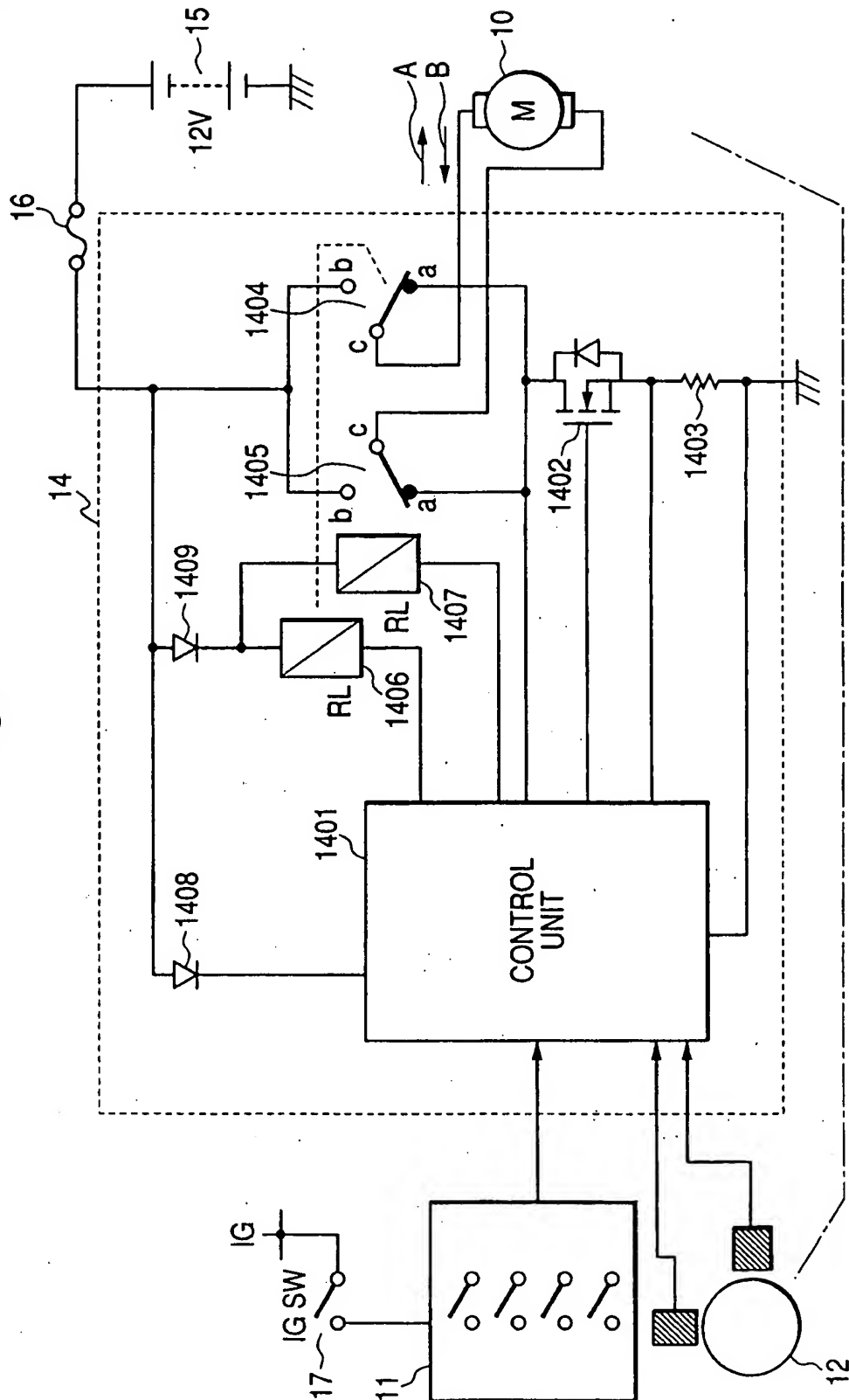


FIG. 2

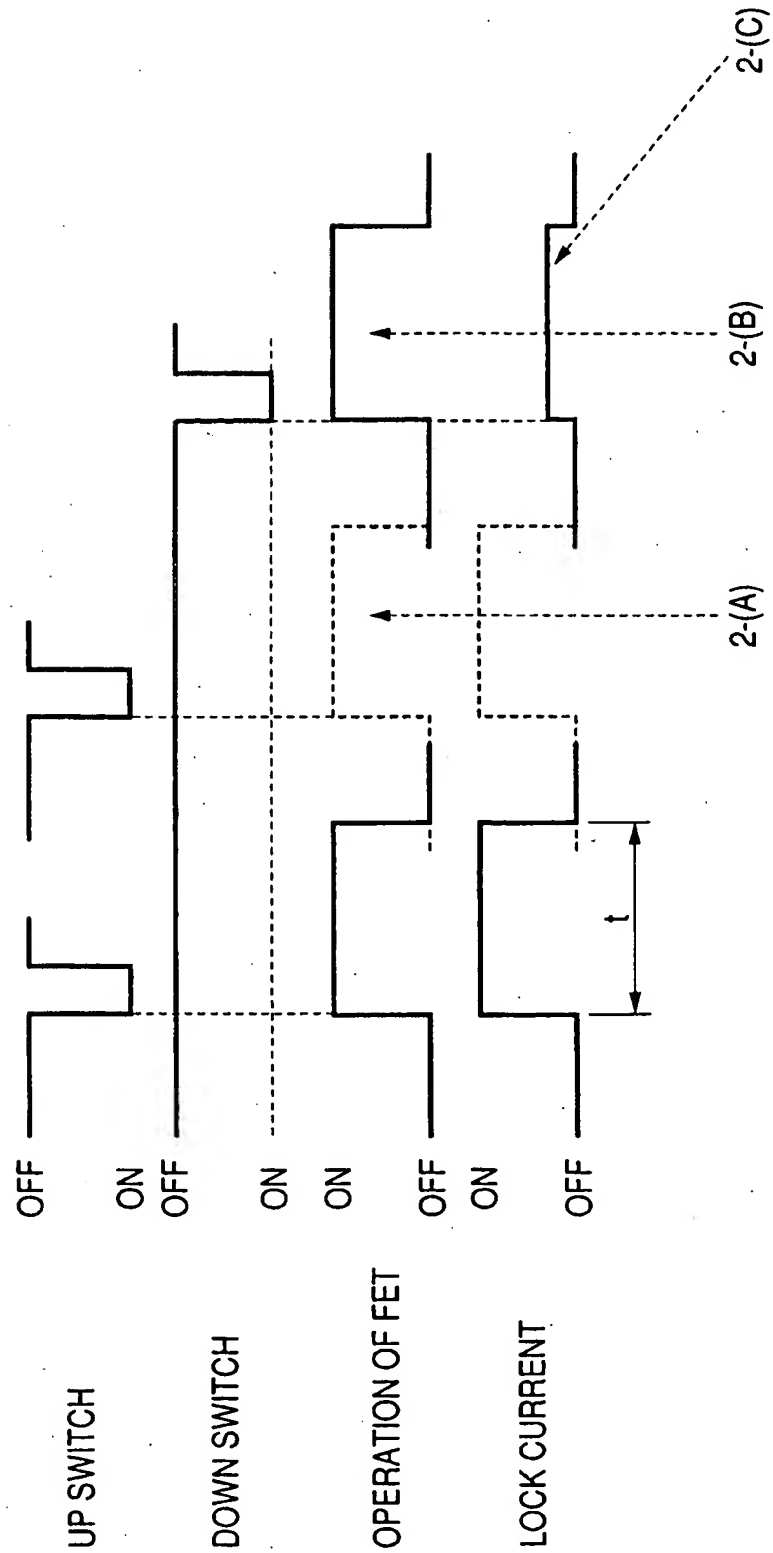
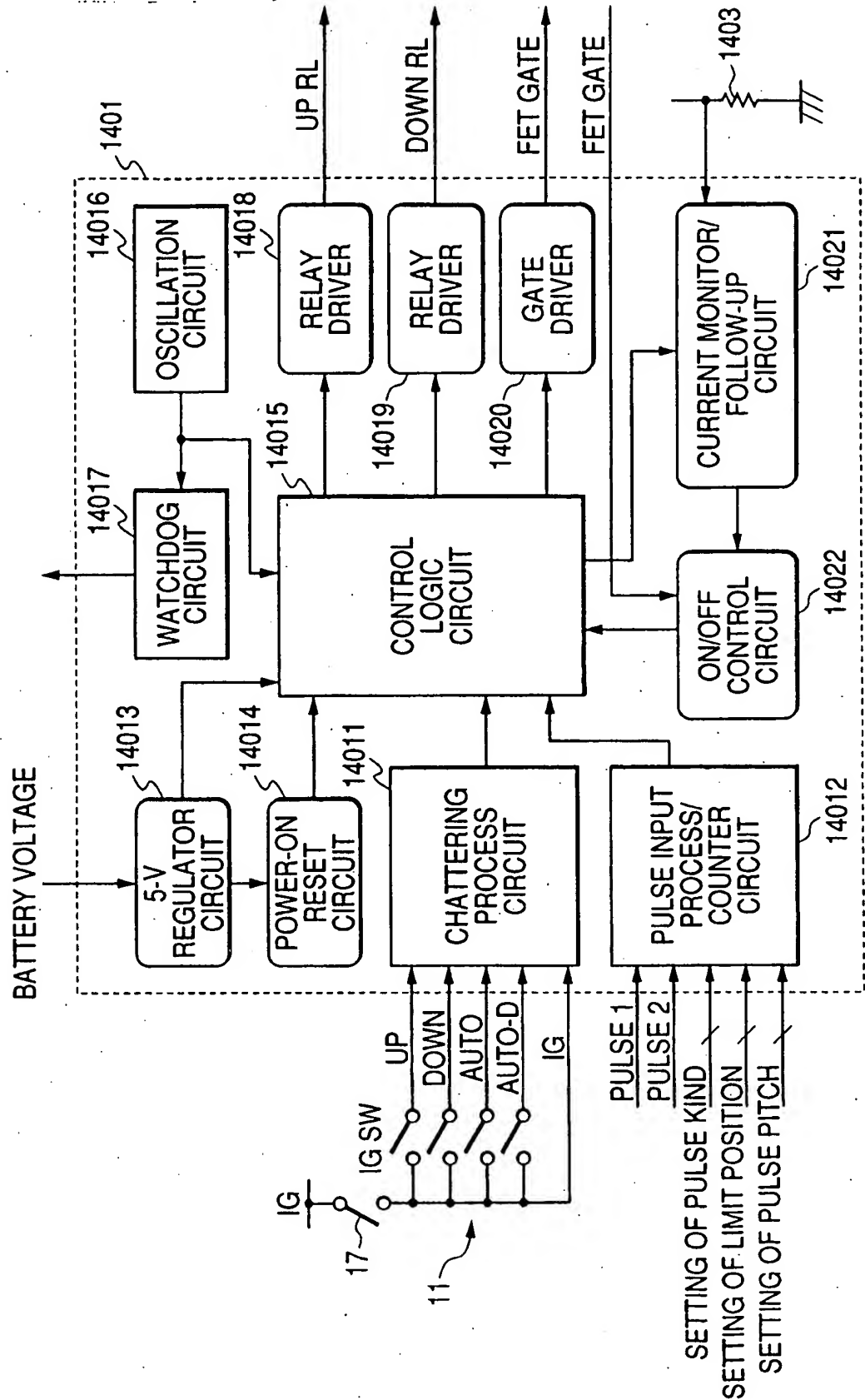


FIG. 3





**FIG. 4**

FIG. 5

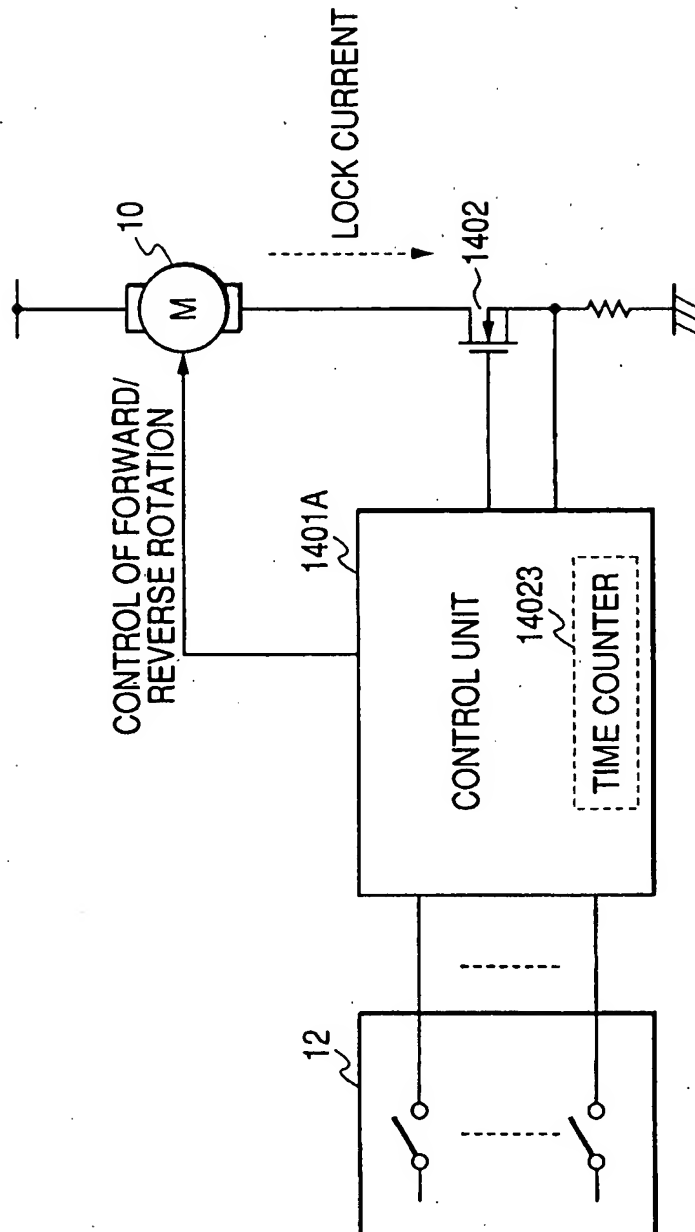


FIG. 6

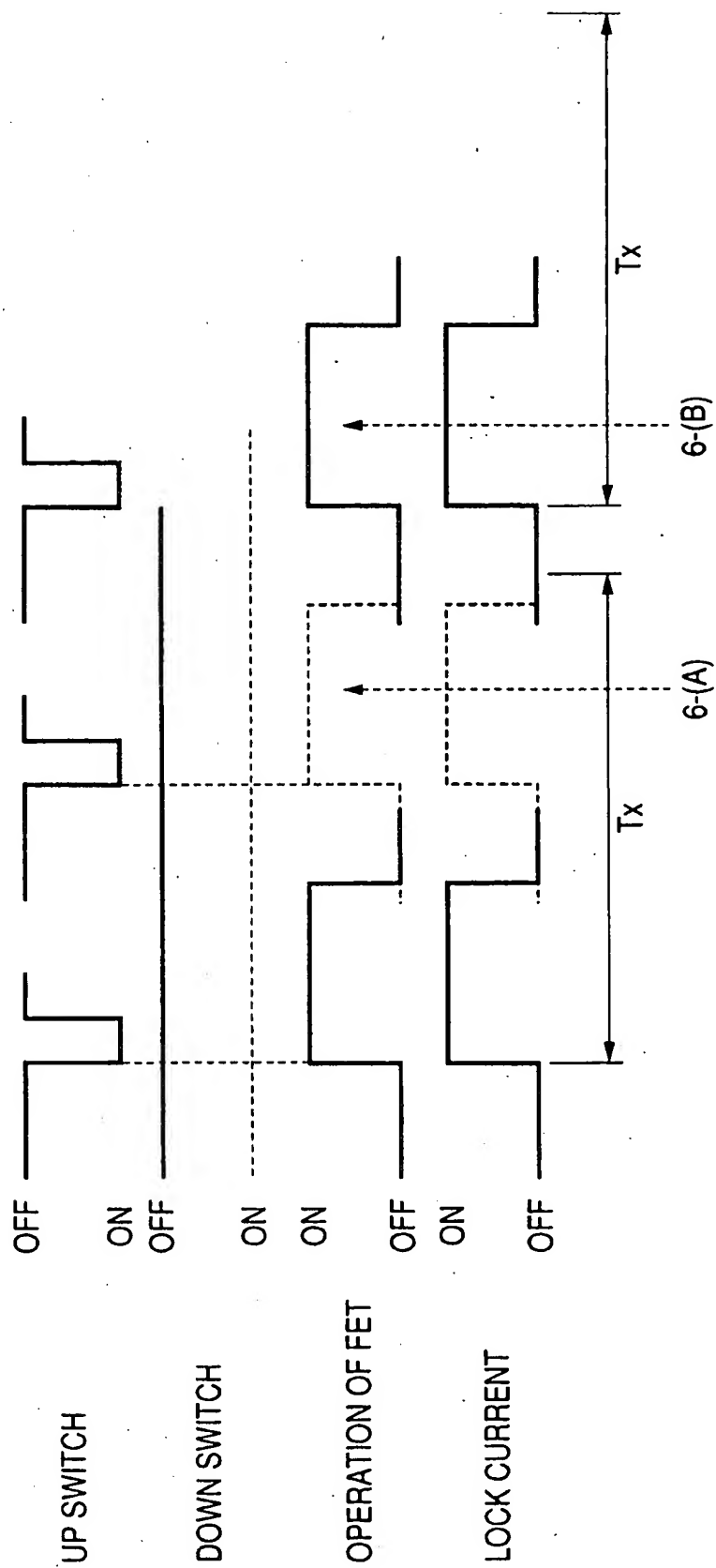


FIG. 7

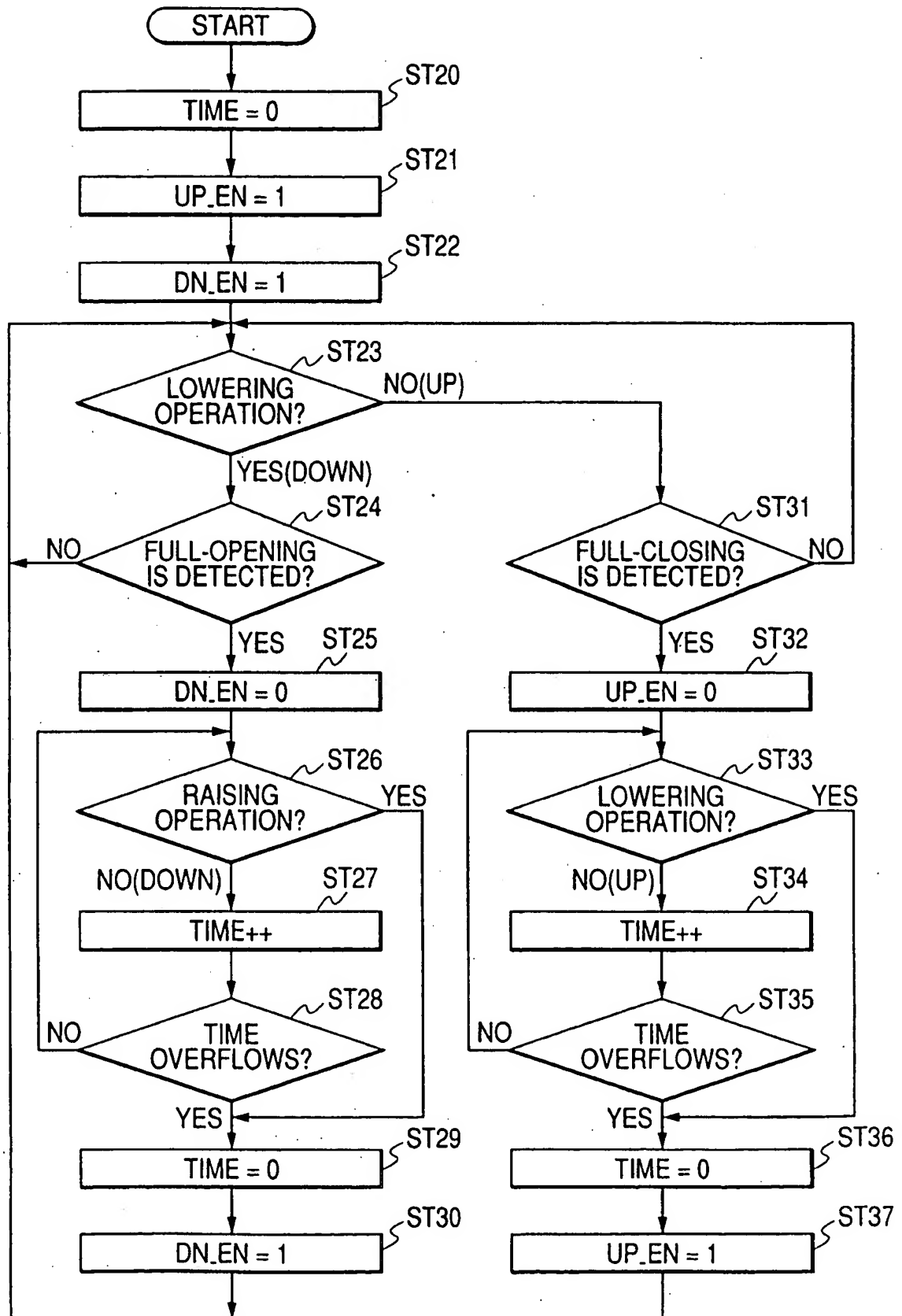
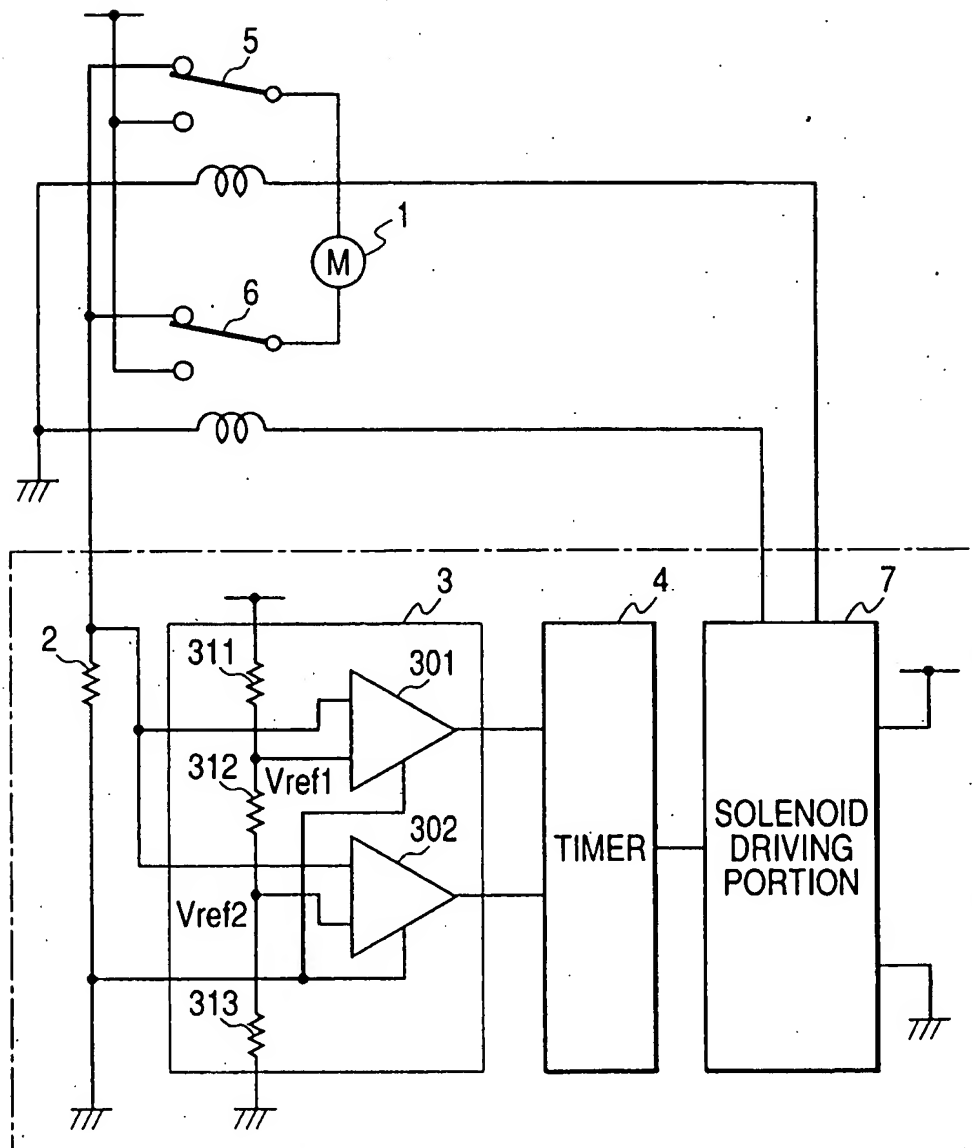
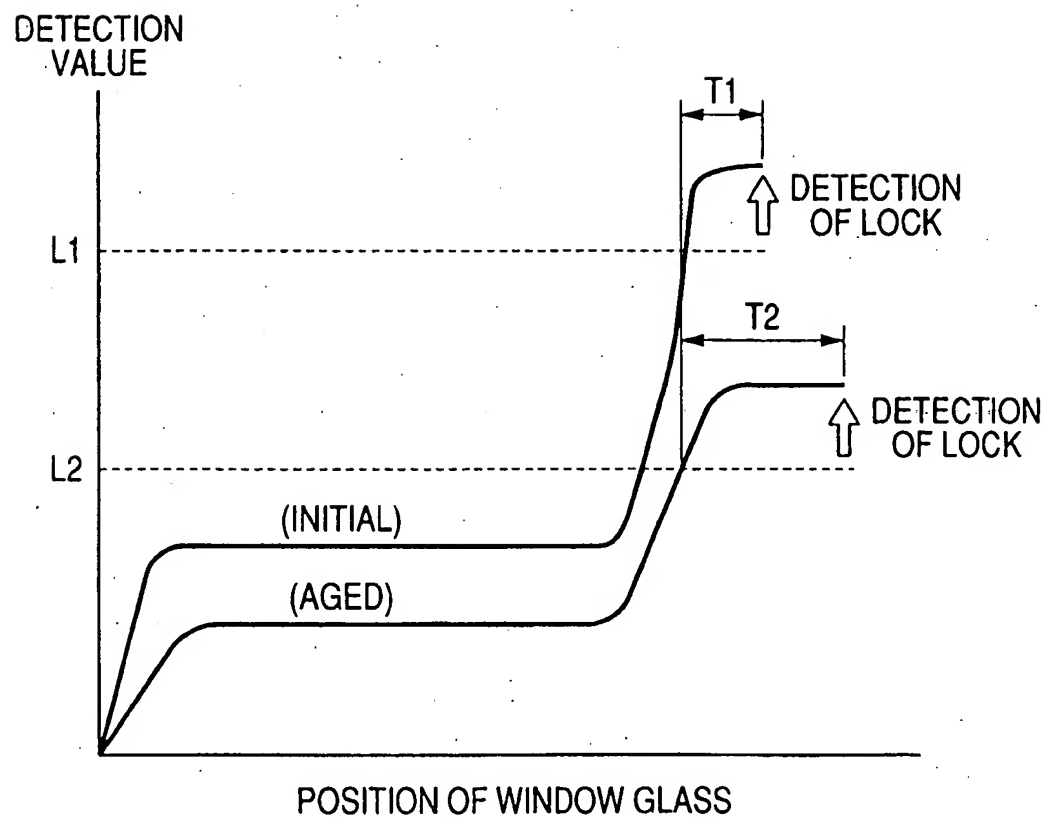


FIG. 8



**FIG. 9**

**Inventors:** Kenichi KATSUMATA, et al.

Filed: April 5, 2004

Serial No.: 10/816,890

**SUGHRUE** Tel. No. 202-293-7060

For: MOTOR DRIVE APPARATUS AND METHOD...

Amendment Under 35 U.S.C. § 1.111

**Fig. 8**

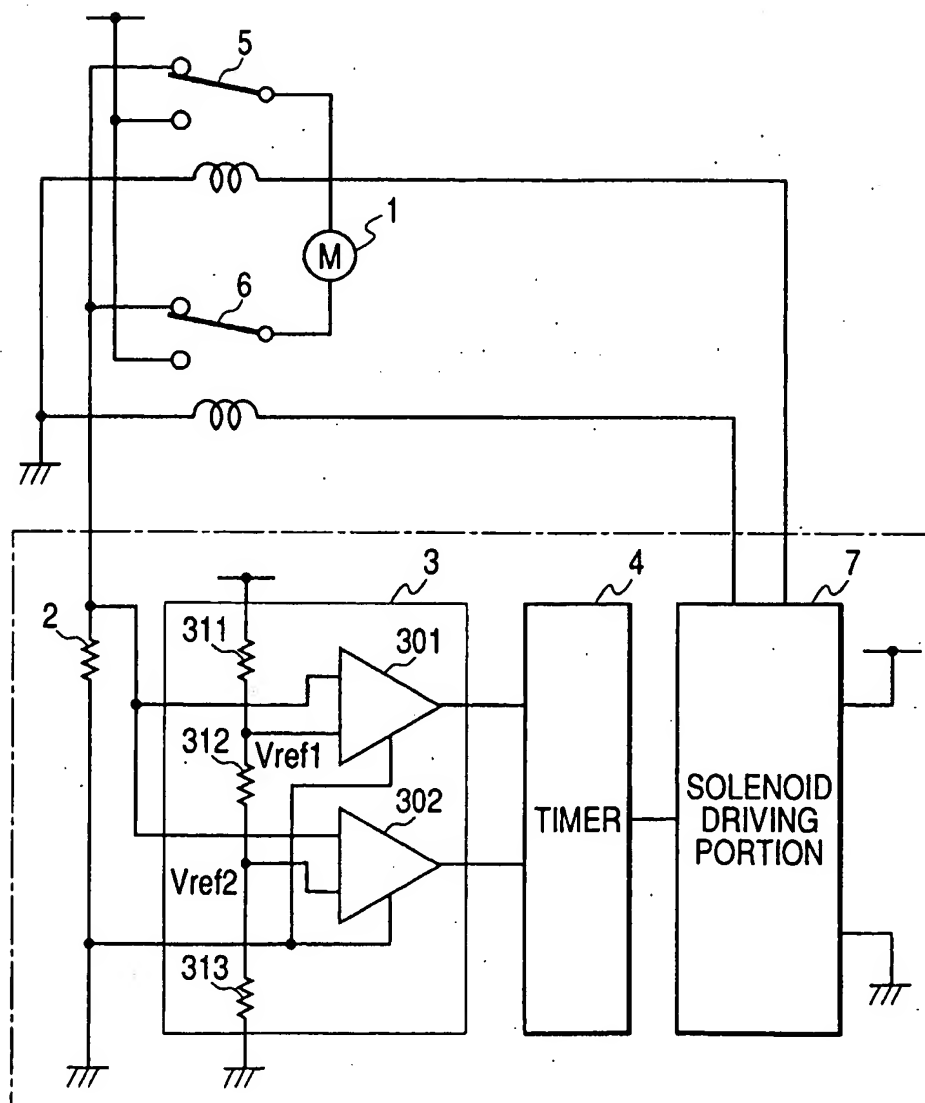
Replacement Sheet 1 of 2

Art Unit: 2837

Conf. No.: 4026

Ref. No.: Q80886

**FIG. 8**



## PRIOR ART

Inventors: Kenichi KATSUMATA, et al.

Filed: April 5, 2004

Serial No.: 10/816,890

SUGHRUE Tel. No. 202-293-7060

For: MOTOR DRIVE APPARATUS AND METHOD...

Amendment Under 35 U.S.C. § 1.111

Art Unit: 2837

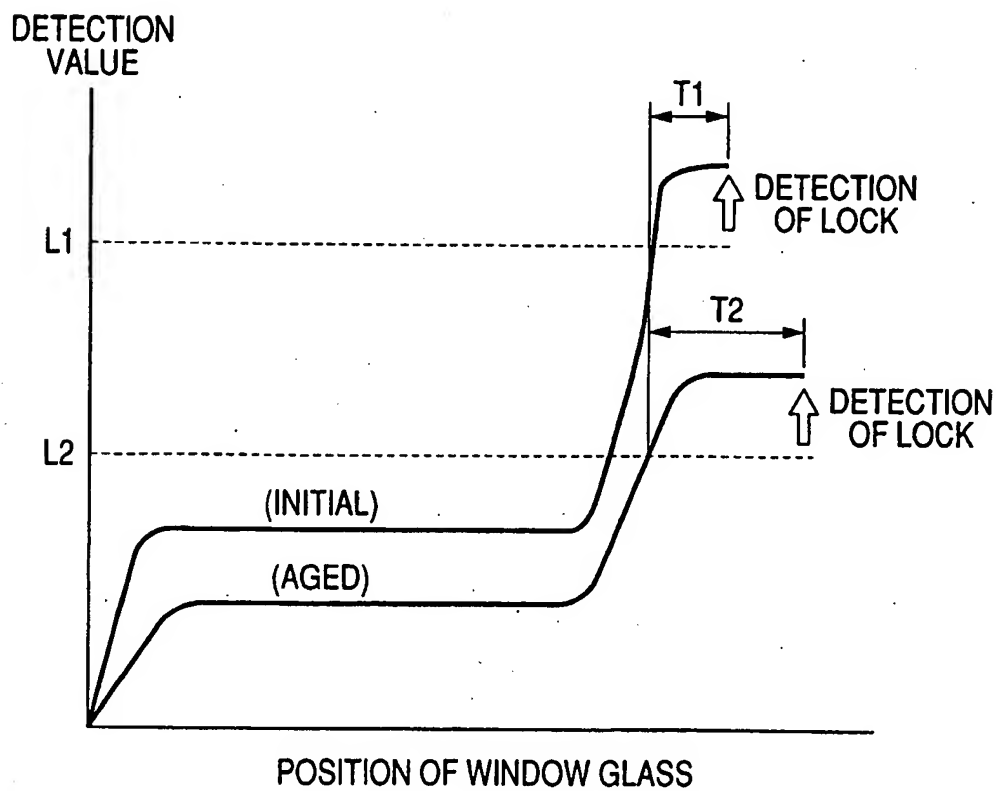
Conf. No.: 4026

Ref. No.: Q80886

Fig. 9

Replacement Sheet 2 of 2

**FIG. 9**



**PRIOR ART**